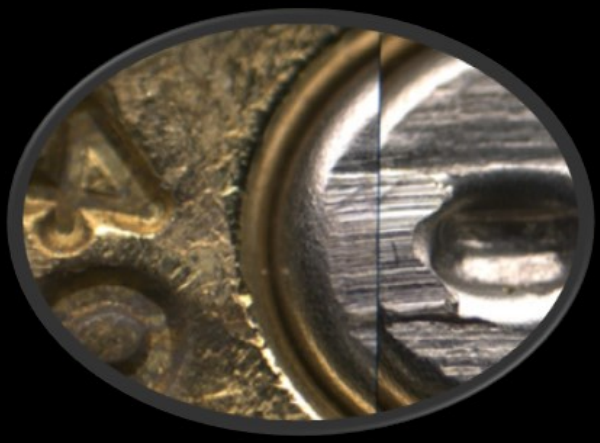
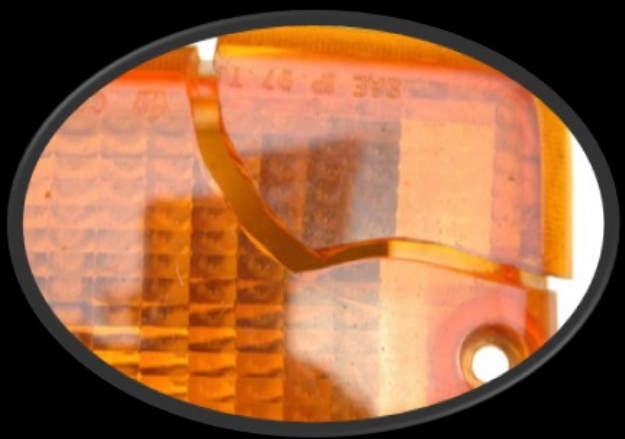


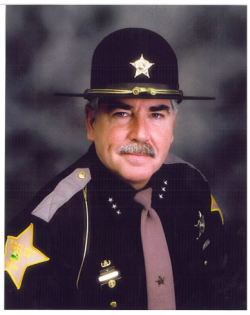
Annual Report 2014

INDIANAPOLIS – MARION COUNTY
FORENSIC LABORATORY



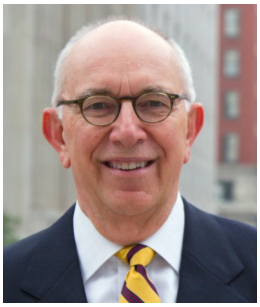
2014 Forensic Services Board

Richard Hite
Chief, Indianapolis Metropolitan Police Department



John Layton
Marion County Sheriff

Billie Breaux
Marion County Auditor



Terry Curry
Marion County Prosecutor

Dr. Frank P. Lloyd, Jr.
Board Secretary
Marion County Coroner

Robert Hill
Board Chairman
Marion County
Chief Public Defender

Dr. Dean Hawley
Mayoral Appointee
IU School of Medicine

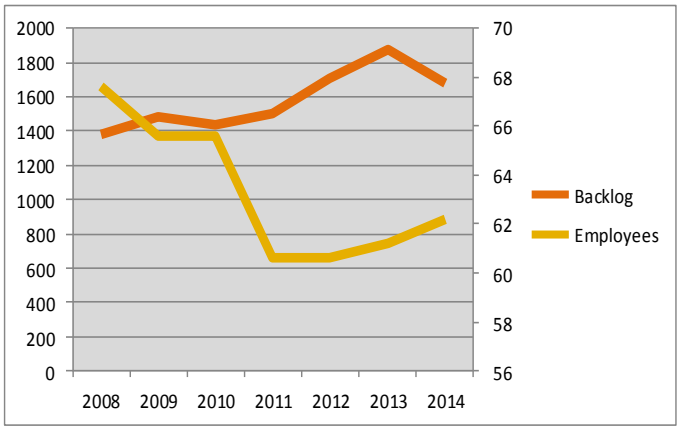
Dr. Sam Nunn
City-County Council Appointee
Professor, IUPUI (SPEA)

We are grateful for the dedication and wisdom of our Forensic Services Board. In spite of their busy lives, filled with other responsibilities, they selflessly gave of their time to serve in 2014. We also acknowledge the following individuals for the same commitment:
Director Drew Carlson, Marion County Auditor's Office (proxy for Auditor Breaux);
Cindy Oetjen, Deputy Prosecuting Attorney (Proxy for Marion County Prosecutor Curry)
Attorney David Lichtenberger, Office of Corporation Counsel.

Michael M. Medler, Laboratory Director

The Mission Statement of the Indianapolis-Marion County Forensic Services Agency (I-MCFSA) is as follows: "The Indianapolis-Marion County Forensic Services Agency shall provide forensic services to the Marion County Community by supporting the needs of the Criminal Justice System. The forensic services provided shall be built on a foundation of **quality, integrity, accountability and ethics**. All I-MCFSA personnel shall strive to meet forensic needs of today and into the future in all their work endeavors."

In 2014, we analyzed 56,646 items of physical evidence while completing 11,206 cases, with our overall case submissions being 11, 653 cases. The significant areas of case backlogs are in latent fingerprint development, firearms, serology, and DNA in which our six week case completion benchmark was not achieved. Staffing and laboratory work space issues are the main catalyst for the backlogs (see chart below).



Notwithstanding, after several years of discussions a new forensic laboratory building project is on the horizon in the next two years. Our staffing issues were aided by additional city/county funding provided for the following: three Crime Scene Specialists, one Serologist/DNA scientist, one Latent Fingerprint Examiner and one Firearms Examiner. We are hopeful that the new hires will be selected with their training programs completed by the fall of 2015. Although, the training programs vary for each forensic discipline, our goal is to have those selected for Crime Scene Specialist trained by the end of 2015, bringing staffing in the Crime Scene Unit to full allotment. The other forensic positions will be selected in 2015 with training programs completed by the end of 2016.

The belief of our personnel in the need to follow the "scientific method" in all our work and to remain a "forensic scientist" in both our approach and actions is embedded within the personnel of the I-MCFSA. The commitment of our personnel and their devotion to duty is observed every day as we work with our criminal justice partners. Many individual sacrifices of both time and effort are expected of our personnel. We look forward to 2015 and beyond as we provide the best forensic support to the criminal justice system and community in Indianapolis and Marion County.

Michael M. Medler
Laboratory Director

Forensic Service Built on a Foundation of Quality, Integrity, Accountability, and Ethics

Overview

The I-MCFSA (Crime Lab) began operations in 1986, providing services to all law enforcement agencies in Marion County. The Crime Lab provides scientific testing on items of evidence recovered in criminal cases by its own Crime Scene Specialists at various police agency crime scenes, Forensic Evidence Technicians working in the Marion County Morgue, and any other police investigators working crimes that occurred in Marion County. Forensic analysis is conducted in the fields of Drug and Trace Chemistry, Latent Fingerprints, Serology & DNA Analysis, Firearms, Toolmark, Footwear & Tiretrack Comparisons, Forensic Documents, Photography, Videography and Digital Imaging. The laboratory provides expert testimony in these areas when requested.

Staffing

The I-MCFSA is authorized 68.6 full time equivalent employee positions. This number is equal to the 2009 staffing level however, six (6) open positions remained unfunded during 2014: three (3) Biology Analyst positions, and three (3) Crime Scene Specialists.

I-MCFSA
Forensic Evidence Specialists

Caseload

Over 55,000 items of evidence were received and over 11,000 cases were completed by the Crime Lab in 2014. Some of the larger areas included Drug Chemistry with over 17,000 evidence items, the Crime Scene Unit with over 10,500 evidence items, and the Biology Unit with over 6,400 evidence items analyzed during the year.

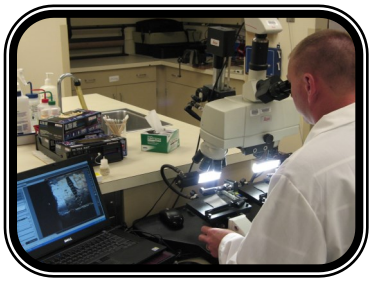
The I-MCFSA is still working toward a goal of an average six-week turnaround in each laboratory section. Personnel shortages caused larger turnaround times again during 2014. The Crime Scene Section, Forensic Evidence Technician Section and the Drug Chemistry Section were the only sections meeting this goal at year end. Firearms analyses were averaging less than nine (9) weeks turnaround with other processing/analyses taking significantly longer.

Criminalistics Unit - Firearms Section

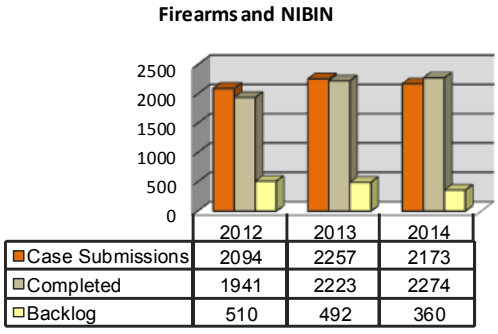
The Firearm Section's principle function is to determine whether a bullet, cartridge case or other ammunition component was fired by a particular firearm. The science of firearms identification extends beyond the comparison of bullets and cartridge cases to include operational knowledge of various types of firearms, the restoration of obliterated serial numbers, the detection of gunpowder residues on garments and the estimation of a muzzle to target distance. Additional examinations performed by the Firearms Section include toolmark analysis, footwear and tire track analysis and physical match analysis. The Firearms Section staffing levels in 2014 increased with the addition of one part-time Firearms Examiner and one fulltime Firearms Technician. This brings the total Firearms Section staffing level to eight personnel with a combined experience of seventy-eight years.

The Firearms Section utilizes the Forensic Technology Incorporated BrassTrax-3D acquisition station in conjunction with the ATF National Integrated Ballistics Information Network (NIBIN) as an investigative tool. This system enables microscopic characteristics from fired cartridge cases and test shot cartridge cases from submitted firearms to be searched against an ever-growing database, and has the potential to connect crimes (NIBIN hits) that otherwise may have never been associated. In 2014, Firearms Section entered 716 evidence fired cartridge cases and 1,697 test shot fired cartridge cases from submitted firearms into NIBIN. These entries resulted in 118 NIBIN hits in 2014. In total, 713 NIBIN hits have occurred since the installation of the technology.

The Firearms Section had an active year in 2014 with an increased number of evidence items submitted per case, increased number of cases completed, the beginning of a three part training program with the Public Defenders office, implementation of a T1 communication line for improved NIBIN performance, educational and informational training opportunities offered by Firearms Section at the police academy and during tours, expansion of the Firearms Section with the allocation of additional work space and implementation of a NIBIN electronic request card.



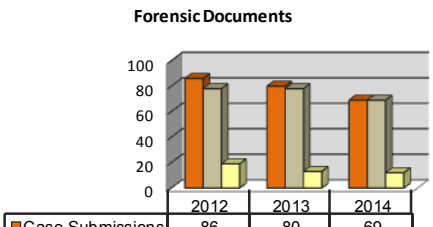
Analyzing fired bullets on a comparison microscope



	2012	2013	2014
Case Submissions	2094	2257	2173
Completed	1941	2223	2274
Backlog	510	492	360

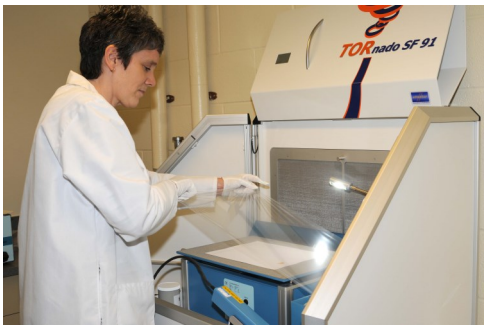
Criminalistics Unit - Forensic Documents Section

The Forensic Documents Section is staffed with one (1) Forensic Document Examiner. In order to comply with accreditation criteria, the I-MCFSA has a Memo of Understanding (MOU) with the Indiana State Police Laboratory for case identification verifications and technical review requirements. The majority of the work is comprised of handwriting comparison – the identification of the writer of documents used in crimes (i.e., charge card receipts, robbery notes). This section also examines indented writing, inks, altered or counterfeit documents, photocopiers, typewriters and other machines or tools used to create documentary evidence.



	2012	2013	2014
Case Submissions	86	80	69
Completed	78	78	69
Backlog	19	13	12

Processing for Indented Writing



Criminalistics Unit - Latent Print Section

Latent prints are invisible replications of the details found in the friction ridge-covered skin on the fingers, palms, toes and soles of a person's feet. This detail is made visible with various processing techniques: dusting with powders, the application of chemicals, and specialized lighting techniques. Once the print is visible it must be preserved by the use of photography, the application of tape, or some other means so that it can be examined and compared.

The I-MCFSA employs four (4) Latent Print Technicians and (3) Latent Print Examiners who process items using various techniques. They capture any ridge detail which becomes visible, generally through the use of digital photography or by making powdered ridge detail stable with adhesive tape. The preserved ridge detail is then transferred to a Latent Print Examiner who examines the detail and determine if it is identifiable, and if so, who deposited it at the scene or on the item of evidence.

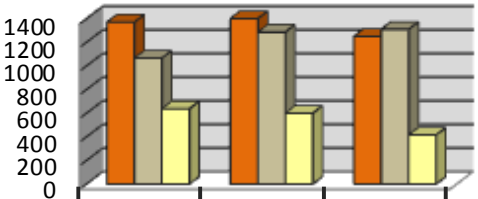
Latent prints are either compared to suspects named as a part of the investigation or entered into the Automated Fingerprint Identification System (AFIS) if suspects are unknown. AFIS is a database tool used by Latent Print Examiners which contains digital replication of known prints of convicted felons and other people (i.e., criminal justice system employees). AFIS makes a digital comparison between unknown latent prints and the known database prints and produces a list of individuals whose prints may match the unknown evidentiary prints. The Latent Print Examiner must still make a side-by-side comparison between the known and unknown prints in order to identify or exclude individuals as having left the latent print, regardless of the AFIS results.

AFIS is also used to store unidentified evidentiary latent prints and continually compares them against the known database as it expands. The system notifies an examiner regarding any potential "hit," or possible match between the unknown prints and known prints of people being added to the database. A total of 377 subjects were identified on latent prints developed by the Crime Lab during the year, many of which resulted from serious and violent crimes.

The I-MCFSA works diligently on all cases in order to identify and exonerate subjects. During 2014, the Questioned Documents and Latent Print sections closely worked together to examine a visible print and a signature found on a court order summons for a case. The defendant was adamant that a family member had stolen her identity and that the print and signature on the document was not hers. The defendant was fingerprinted and also provided a handwriting sample. After examination of the fingerprint, the defendant was eliminated and her sister was identified to the print appearing on the document. The defendant was also virtually eliminated as the writer of the signature.

Latent Print Technician processing evidence.

Latent Fingerprint Processing & Comparison



	2012	2013	2014
Case Submissions	1370	1453	1249
Completed	1066	1286	1310
Backlog	637	600	416

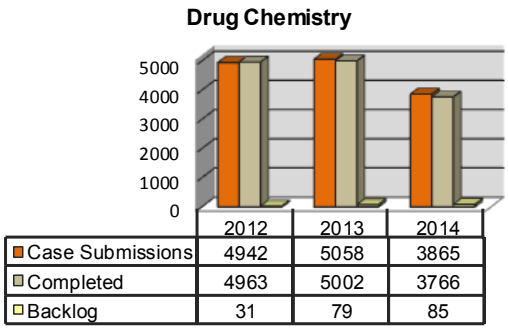
Chemistry Unit - Drug Chemistry Section

At the close of 2014, the chemistry section was operating with four (4) full time drug chemists. The turn-around-time for drug analyses reports increased substantially in 2014, due to loss of staff from retirements and resignations. This made it necessary to hire and train three (3) new replacement Chemists, and an additional new chemist in 2015. A fully staffed section of seven (7), including the supervisor, should be operating by June of 2015.

The drug chemistry unit continues to process high levels of Heroin and Methamphetamine submissions. Other drugs regularly identified in the section are Marijuana, Cocaine, and Synthetic Cannabinoids (commonly called Spice). Tablets frequently seen in submissions are opiates (such as oxycodone and hydrocodone, commonly called Vicodin), and benzodiazepines (such as Clonazepam and Alprazolam, commonly called Xanax). Multiple tests are conducted on all suspected controlled substances received by the Crime Lab. The testing accomplished on each piece of evidence is determined by scientific principles and protocols used by Forensic Scientists and accredited laboratories throughout the country.

The Indianapolis Metropolitan Police Department's preliminary testing program, which started in 2005, is still successfully spot testing commonly found drugs of abuse, resulting in fewer submissions to the Crime Lab's Drug Chemistry Section. Only cases which are scheduled for trial, or where testing is requested for confirmatory drug testing, are submitted to the laboratory.

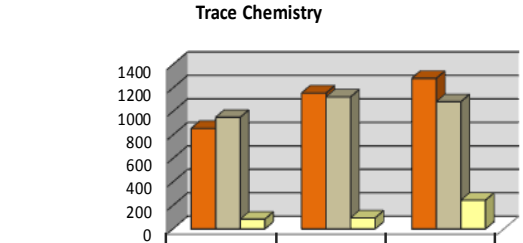
Weighing drug evidence



	2012	2013	2014
Case Submissions	4942	5058	3865
Completed	4963	5002	3766
Backlog	31	79	85

Chemistry Unit - Trace Chemistry Section

The Trace Chemistry Section is staffed with two (2) Trace Chemists. This section analyzes and/or compares hairs, fibers, fire debris, blood alcohol, physical matches, and other evidentiary items. Due to the low submission rate over several years, analysis pertaining to auto headlamps and paint are no longer performed at the I-MCFSA. These analyses are now being submitted to the Indiana State Police Lab. This unit's turn-around-time has also significantly increased in 2014 due to staffing issues in the drug chemistry section. As resources become available in early 2015, chemists will be cross-trained to perform analyses in this unit to aid in backlog reduction.



	2012	2013	2014
Case Submissions	856	1157	1283
Completed	951	1124	1084
Backlog	83	94	245

Preparing fire debris evidence

Biology Unit - DNA & Serology Sections

The Biology Unit consists of two sections: DNA Analysis and Serology. It is staffed with six (6) DNA Analysts, three (3) Serologists, and a Technician; two (2) of which are supervisors in the unit - a DNA Section Technical Leader and a Biology Section Supervisor. Five (5) of the DNA Analysts are also proficient in serological analysis, one (1) of the Serologists is in training to become proficient in DNA analysis and one (1) of the DNA Analysts is in training for serological procedures.

All DNA cases begin with the examination of evidence by Forensic Scientists. They examine the evidence employing various visual, microscopic, and chemical techniques in search of potential biological stains. Once found, the Serologist documents, identifies, and prepares samples of the biological stains for the DNA Section. Clothing, bedding, weapons and other evidentiary items are carefully documented and sampled during the Serologist's search for biological stains.

DNA Analyst Reviewing Data

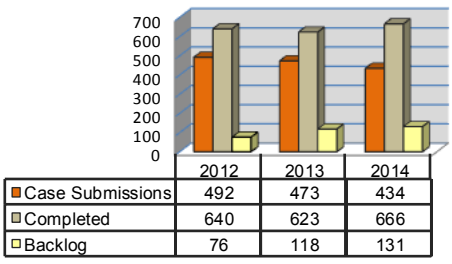
Serologist Identifying Stains

The DNA Section develops DNA profiles from evidentiary samples for comparison with DNA profiles of suspects, or for submission into the Combined DNA Index System (CODIS) database. This database is particularly useful when a biological sample is obtained from the crime scene and known suspects do not exist. CODIS allows unknown profiles to be searched against other profiles in the database, which are generally those of convicted felons, arrestees (in some states) and unknown profiles from other cases. At the present time there are over thirteen million (13,000,000) DNA profiles in the national database.

In 2014 the DNA section made changes to streamline sample processing and increase expedite casework efficiency. The Biomek NXP Robot was added to case flow to aid in sample processing. This robot sets up samples for case processing allowing DNA analyst to spend time completing other necessary tasks. Additional equipment was also purchased to accommodate the needs of the section.

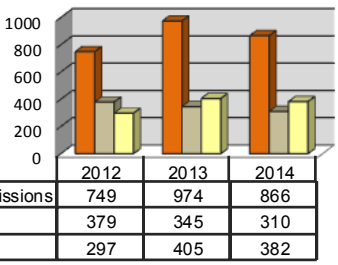
DNA Section casework resulted in fifty-nine (59) confirmed CODIS hits during 2014, including seven (7) homicide cases, nine (9) rape cases, ten (10) robberies, thirty (30) burglaries, two (2) theft/vehicle larceny cases, and one (1) person shot. These are cases which may have potentially remained unsolved, or taken significantly longer to solve, without the use of CODIS.

DNA



	2012	2013	2014
Case Submissions	492	473	434
Completed	640	623	666
Backlog	76	118	131

Serology



	2012	2013	2014
Case Submissions	749	974	866
Completed	379	345	310
Backlog	297	405	382

Crime Scene Unit - Crime Scene Section

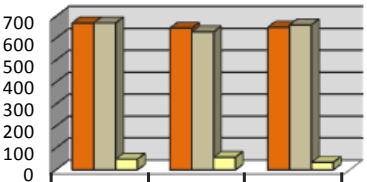
The Crime Scene Unit consists of two (2) sections: the Crime Scene Section and the Forensic Evidence Technician Section.

The Crime Scene section is the only section staffed 24-hours a day and 365 days a year. There were a total of 11 full time Crime Scene Specialists on staff at year's end, which was down from the previous year due to attrition in staffing. The unfunded/open positions are being filled in 2015 and the goal is to move toward full staffing of seventeen (17) Crime Scene Specialists, including the Supervisor and Technical Team Leader. There was a continued improvement in completed reports by team members, which led to continued satisfaction from our clients (detectives, prosecutors and defense attorneys).

In 2014, the section responded to a total of 661 crime scenes, completing 640, with a backlog of 85 at year's end. The agency goal of 42 days for completing case reports was met with an average turnaround time for the unit was 27.4 days. These numbers illustrate a commitment by the team members to provide a quality crime scene investigations to the Criminal Justice System.

Evidence Collection Search

Crime Scene Section



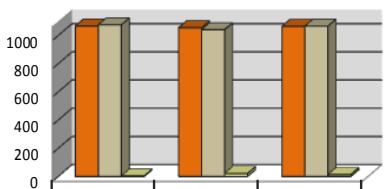
	2012	2013	2014
Case Submissions	669	646	650
Completed	670	629	661
Backlog	49	57	34

Crime Scene Unit - Forensic Evidence Technician Section

The Forensic Evidence Technician (FET) Section attends autopsies involved in investigations for the purposes of collecting physical evidence including clothing, blood, hair, fibers, touch DNA and other trace evidence, in addition to rolling of fingerprints for identification. The section consists of four (4) individuals, including the Technical Leader. The FETs also have secondary responsibilities for processing evidence items collected at autopsy, along with the retrieval and processing of sexual assault kits from various hospitals in Marion County. The FETs are cross trained for assisting with latent print processing of evidence and help alleviate the backlog of evidence processing requests. The FETs perform crime scene video duplication and uploading, maintaining the crime scene library, and are responsible for maintaining the supplies and camera equipment for the entire Crime Scene Unit.

In 2014, the section worked a total of 243 investigations, while completing 231 and having a backlog of 14 at year's end. The turnaround time for the section was 35.8 days which is under the agency's 42 day goal.

Forensic Evidence Technician Section



	2012	2013	2014
Case Submissions	1067	1055	1064
Completed	1075	1041	1066
Backlog	4	21	14

Collection of Evidence at Autopsy

Administrative Unit

Administrative staffing consists of nine and six-tenths (9.6) positions (the 0.6 representing a part time position), including: a Director, Chief Deputy Director/Quality Assurance Manager, Deputy Director-Forensic Operations Manager, Deputy Director-Forensic Administrator, four and six-tenths (4.6) Forensic Evidence Specialists, and a custodian. Areas of responsibility include the quality assurance program, budget management, purchasing, information technology, security, human resources, grant management, evidence handling and administrative functions.

Staffing

The agency closed the year with six (6) unfunded positions and four (4) vacant positions.

Accreditation

The I-MCFSA maintained its American Society of Crime Laboratory Directors/Laboratory Accreditation Board–*International* Accreditation during 2014, successfully completing the annual surveillance visit. The purpose of this accreditation includes: to improve the quality of laboratory services; to maintain standards by which the laboratory can assess its performance and strengthen the operation; to provide an independent, impartial, and objective system for a total operational review; and to offer to the general public and to users of laboratory services a means of identifying those laboratories which have demonstrated compliance with established standards.

Grant Management

A component of the continued success of this agency is the receipt of State and Federal Grant monies. This agency continually pursues grant opportunities and has been fortunate in receiving federal and local awards. The I-MCFSA was successful in receiving grant awards totaling $911,094 for the purchase of equipment for several sections of the laboratory, to provide training and development for the employees, to purchase supplies, to assist in the analysis of DNA cases and to provide three (3) grant funded personnel and overtime for various sections of the laboratory to assist in decreasing the overall laboratory backlog.

Annual Budget	2012	2013	2014
Annual Budget	$6,561,670	$6,884,418	$7,025,326
Expenses			
Personal Services	$5,061,859	$5,639,553	$5,628,872
Materials and Supplies	$ 456,861	$ 439,507	$ 357,755
Services and Charges	$ 841,785	$ 759,483	$ 870,877
Properties and Equipment	$ 201,165	$ 45,875	$ 167,822
Funding Sources			
County General Fund	$5,514,492	$5,880,872	$5,825,312
State and Federal Grants	$1,047,178	$1,003,546	$1,115,014
Public Safety Income Tax	$ 864,263	$ 0	$ 0
Cumulative Capital Imp. Fund	$ 0	$ 0	$ 85,000

Administrative Unit

Procurement

This section continued to adapt and excel at providing all purchasing for the agency. A wide and diverse range of items must be purchased on a daily basis in support of the broad spectrum of mission requirements seen in the I-MCFSA. The process of purchasing an item starts with a needs assessment, followed by specification determination, identification of and notification to vendor, receipt and review of quotes, order placement, and delivery. An initial inspection of the item is conducted and if everything is in order, payment arrangements are initiated. When equipment or instrumentation is being replaced, disposing of old items would also occur at that time. The entire process of procurement is a critical function of an agency's operation plan. Weaknesses in the procurement function can and will weaken the agency's ability to meet its organizational mission objectives. In 2014, 2,708 individual purchases were completed along with all necessary vendor payments.

Budget

Budgetary restrictions and challenges continued in 2014. The operational budget is an important administrative tool. The budget is designed to cover all expected expenditures for the year. It is also the resource called upon to deal with unexpected situations. Careful monitoring of the budget, including review of future requirements, is crucial for early identification of funding shortfalls. The budget requires constant monitoring of spending as compared to the annual spending plan created at the beginning of the year. For 2014, this agency met all of its budgetary objectives. Within County General Funding, this agency experienced a 97.1% spending rate, with Grant Funding at 84.6% and the Cumulative Capital Improvement Fund at a 96.5% rate.

Forensic Evidence Specialists verifying evidence

Information Technology

Improvements continued within the area of technology in 2014. The agency upgraded 97 new desktop computers, taking this agency to the Windows7 platform. Related to that upgrade project was the replacement of 63 label printers and addition of 29 new label printers. The new printers required all labels utilized with our main application, LIMS (Laboratory Information Management System). Several projects were initiated toward the end of 2014 and will continue into 2015, the first being a major upgrade of DNA instrumentation. A study was conducted and implemented in late September. New equipment began to arrive in November and will be placed on line after the required validation studies are conducted. The remainder of the instrument upgrades are due to arrive in April/May of 2015, with validation completed later in the year. Another system being upgraded is the online report function used by our customers which will provide a quicker response time and to correct certain features performing below expectations. The final project carrying over to 2015 is the installation of a Small Area Network designed for the Biology Unit. This project will allow quicker data transfers while at the same time, maintaining the required data security.

Training and Tours

Over 1,845 people, including Marion County Judges, police officers and college students, received training and/or tours from Crime Lab personnel during 2014. General evidence technician courses were again provided to IMPD Evidence Technicians and recruit classes.